

Satellite.	Phenomenon.	G. M. T.	In excess of N.A.	Observer.	Remarks.
1879, Dec. 12	II. Oc. D. First contact	4 56 5.6	m s	W. McK.	Defin. good at times. Thin clouds passing.
	Bisection	58 10.2			
	Last seen	5 0 32.5			
23	IV. Sh. E. Int. contact	6 38 14.4		S. J. P.	Limb boiling. Defin. fair at centre. Sh.
	Bisection	49 57.0			very black at edge of 4. Obs. indifferent.
I.	Oc. D. Ext. contact	7 47 32.4		,	Defin. very bad.
	Bisection	49 57.0			
24	I. Tr. I. Ext. contact	4 57 28.5		W. McK.	At bisection thin clouds; at internal contact
	Bisection	5 0 41.1			sky very clear.
	Int. contact	4 19			
I.	Sh. I. Bisection	6 16 19.7		W. C.	Hazy and slightly tremulous. Sh. very black.
	Int. contact	17 37.2			
I.	Tr. E. Bisection	7 20 8.3			
	Ext. contact	22 21.3		,	Satellite exceedingly faint on planet. Un-
					steady.
I.	Tr. E. Bisection	6 15 38.7			Satellite very faint off disk. Unsteady.
	Ext. contact	17 39.8			
1880, Jan. 22	II. Ec. D. Last seen	13 16 10.3	+0 52.3	,	Very good.
Sept. 8	I. Sh. I. Bisection	13 33 29.2			Good. Sh. very black, but very small.
28	III. Int. contact	35 50.7			

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		h m s	m s	W. C.	
Sept. 28	Tr. I. Ext. contact	14 34 27.9			
	Bisection	38 54.4			
	Int. contact	44 44.4			
28	Sh. E. Int. contact	15 59 52.5			Sky hazy, but defin. fairly good.
	Bisection	16 3 9.0			
	Last seen	7 11.5			
Oct. 2	Ec. D. Last seen	8 14 45.7	+0 37.7		Rather difficult owing to brilliancy of planet.
2	Sh. I. Bisection	10 45 30.6			Rather faint. Defin. good.
	Int. contact	47 35.4			
2	Tr. I. Ext. contact	10 51 7.0			
	Bisection	52 31.7			
	Int. contact	54 52.4			
2	Tr. E. Bisection	13 1 40.5			
	Ext. contact	4 11.9			
3	Ec. D. Last seen	7 57 7.5	-0 18.5	S. J. P.	Fair, limb blinding, satellite close to limb.
3	Oc. R. First seen	10 12 50.1		"	Good, limb a little unsteady. Defin. very
	Bisection	14 50.4			good.
	Ext. contact	16 34.6			
8	Oc. D. Ext. contact	15 16 30.1		W. C.	Defin. good, rather unsteady.
	Bisection	18 31.6			
	Last seen	20 35.6			

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Oct.	III.	Oc. D. Ext. contact	h m s	m s		
	Bisection	7 8 37.7				
		11 46.9				
	Last seen	14 52.1				
9	,"	Ec. R. First seen	9 47 0.2	-3 18.8	"	Good, full brilliancy 4 ^m later. Rather diffused owing to satellite being so near 4.
9	II.	Oc. D. Ext. contact	10 39 28.5	"		Slight haze round 4. Slightly tremulous but defin. good.
	Bisection	41 27.0				
	Last seen	43 35.4				
9	I.	Tr. I. Ext. contact	12 32 55.6	"		Defin. poor, tremulous.
	Bisection	35 12.4				
	Int. contact	36 52.1				
9	,"	Sh. I. Bisection	12 39 27.7	"		Tremulous. Sh. faint.
	Int. contact	42 3.2				
9	II.	Ec. R. First seen	13 24 42.7	-0 21.3	"	Very good.
9	I.	Tr. E. Int. contact	14 42 25.9			Defin. good. Tremulous. Sh. too faint to observe in so unsteady a sky.
	Bisection	45 12.7				
	Ext. contact	47 57.9				
10	,"	Oc. D. Ext. contact	9 41 1.2		S. J. P.	Defin. poor. Satellite projected on limb during occultation. Limb very tremulous
	Bisection	45 24.7				
	Last seen	47 39.7				

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Oct. 10	I.	Ec. R. First seen Full light	12 4 7.1 6 19.3	m 8 + 1 25.1	W. C. Good. Full light only approx.
11	"	Tr. I. Ext. contact Bisection	6 55 2.0 57 0.9	S. J. P.	Satellite very bright on disk. Obs. only fair, misty.
11	"	Int. contact Tr. E. Int. contact	7 0 43.8 9 6 27.1	,"	Defin. good, but passing clouds.
		Bisection	10 12.3		
		Ext. contact	13 6.0		
19	"	Oc. D. Ext. contact Bisection	5 53 23.7 54 56.7	W. C.	Last contact seen through thin clouds. Sh. very small, fairly distinct at times, but clouds too frequent for good obs. of egress of Sh.
19	"	Ec. R. First seen Full light	8 26 44.3 29 51.9	- 0 8.7 ,"	Only fair, defin. poor, tremulous.
23	III.	Oc. D. Ext. contact Bisection	13 40 23.8 44 40.6	,"	Fair. Screen used.
23	II.	Ec. D. Ext. contact Bisection	14 49 9.0 7 11.9	,"	Defin. good, slightly unsteady.
		Last seen	9 2.6		Defin. very poor, tremulous.

Satellite.	Nov.	II.	Tr. I.	Phenomenon.	G. M. T.	In excess of N. A.	Observer.	Remarks.
				Bisection	h m s 11 56 26	m s	W. C.	Defin. not very good.
I	I.	Tr. I.	Ext. contact	Int. contact	58 11.8			
				Int. contact	12 0 31.5			Defin. poor, unsteady.
I	I.	Tr. I.	Ext. contact	Bisection	12 9 42.0		"	
				Bisection	10 30.6			
I	,		Int. contact	Int. contact	13 4.8			
				Sh. I. Bisection	12 54 26.6			Fair, defin. improved.
I	II.	Sh. I.	Full on	Full on	56 26.2		W. C.	Defin. bad. Sh. small and faint.
I	I.	Tr. E.	Int. contact	Bisection	13 16 21.9			
				Bisection	19 8.1			
I	II.	Tr. E.	Ext. contact	Ext. contact	14 21 41.0		"	
I	I.	Tr. E.	Int. contact	Bisection	23 54.1			
				Bisection	26 35.3			Defin. fair, tremulous.
I	II.	Tr. E.	Ext. contact	Ext. contact	14 34 38.8		"	
I	I.	Tr. E.	Int. contact	Bisection	36 26.2			
				Bisection	36 26.2			Very unsteady.
3	,	Oc. D.	Ext. contact	Ext. contact	38 12.0			
				Bisection	6 26 47.6		"	Good.
				Last seen	1.1.30			
					33 24.6			

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Satellite.	Phenomenon.	G. M. T. h m s	In excess of N.A. m s	W. C.	Remarks.
Nov. 3 I.	Tr. I. Ext. contact	6 37 58.6			
	Bisection	40 40.3			
	Int. contact	43 6.1			
3 III.	Tr. I. Ext. contact	6 47 51.6			
	Bisection	52 34.6			
	Int. contact	57 50.1			
3 I.	Sh. I. Bisection	7 21 38.2			
	Full on	23 24.2			
3 ,	Tr. E. Int. contact	8 48 30.9			
	Bisection	50 38.4			
	Ext. contact	52 50.4			
3 III.	Tr. E. Int. contact	9 11 52.9			
	Bisection	18 25.4			
	Ext. contact	23 55.0			
3 I.	Sh. E. Int. contact	9 29 39.5			
	Bisection	30 59.5			
	Last seen	32 52.5			
3 III.	Sh. I. Bisection	9 41 29.5			
	Full on	44 41.5			
3 II.	Ec. R. First seen	10 26 40.0	-2 3.0	"	
	Full light	31 4.6			

Satellite.	Phenomenon.	G. M. T.	In excess of N. A.	Observer.	Remarks
Nov. 3	III. Sh. E. Int. contact	12 3 26.8	m s	W. C.	Very poor, defin. bad, unsteady.
	Bisection	6 55.8			
	Last seen	10 24.8			
19	II. Tr. I. Ext. contact	5 47 36.2		,	Very poor. Thin clouds passing.
	Bisection	49 55.7			
	Int. contact	52 23.2			
19	I. Tr. F. Int. contact	6 48 48.6		,	Good, night much better.
	Bisection	51 2.3			
	Ext. contact	53 25.1			
19	II. Tr. E. Int. contact	8 26 6.2		,	Rather tremulous, but obs. very good.
	Bisection	29 18.9			
	Ext. contact	31 36.4			
20	I. Ec. R. First seen	5 6 47.1	-0 19.9	"	
21	II. Ec. R. First seen	4 56 25.5	-1 38.5	"	Sky hazy, full light 3 rd later.
21	III. Oc. R. Bisection	5 51 4.8			Tremulous, but obs. good.
	Ext. contact	54 58.8			
27	I. Ec. R. First seen	7 2 36.3	-0 19.7	"	Sky rather hazy.
	Full light	4 56.6			